

REMARKS

I. TITLE

The title has been amended per the examiner's requirement to be more clearly indicative of the invention, and now reads "APPARATUS AND METHOD FOR SEPARATE ASYMMETRIC CONTROL PROCESSING AND DATA PATH PROCESSING IN A DUAL PATH PROCESSOR."

II. STATUTORY SUBJECT MATTER 35 U.S.C. § 101, claims 23 and 24

Claims 23 and 24 stand rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter because the claim 23 term "program code means" purportedly could include written code, and the claim 24 term "instruction set" purportedly is non-statutory.

Claims 23 and 24 have been amended to recite "computer-readable medium." See MPEP § 2106(IV)(B)(2)(a) for additional discussion regarding statutory product claims. Thus, claims 23 and 24 are statutory subject matter.

III. INDEFINITENESS 35 U.S.C. § 112, claims 1-23

Claims 1-23 stand rejected as allegedly indefinite due to purportedly failing to set forth the subject matter which applicant(s) regard as their invention. Specifically, the Office Action, at page 3, asserts that Applicants' specification paragraph 4 of page 6 does not match what is stated in the claim. Specifically, the Office Action asserts that in the disclosure fixed operators and configurable operators are taken in the same data path, while control instructions are taken in another data path, and asserts that in the claims the fixed operators and configurable operators are in different data paths. The Applicant respectfully traverses this interpretation.

Specifically, the present application, paragraph 3, page 6, recites “data is supplied to either the fixed or the configurable execution sub-paths of the data processing path of the machine.”

Referring to Figure 1 of the present application, Instruction Decode 101 directs control instructions to Control Execution 102 and directs data instructions to Data Execution 103. Inside of Data Execution 103, fixed execution instructions are directed to SIMD Fixed Execution Unit 109 and configurable execution instructions are directed to Configurable Deep Execution Unit 110. Thus, in one embodiment fixed and configurable execution instructions travel in the same data execution path to Data Execution Unit 103, but may be separated into “sub-paths” within Data Execution Unit 103. Thus, claims 1-23 are definite.

IV. PRIOR ART REJECTIONS, claims 1-28

Independent claims 1 and 22-25 (all of the independent claims) stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Trimberger (U.S. Patent 5,737,631).

A. Independent claim 1, and dependent claims 2-21

Independent claim 1 has been amended to recite “a control processing facility comprising a control execution path.” This amendment is supported at least by page 5, second paragraph of the Applicant’s description.

The Office Action asserts that Trimberger discloses all of the limitations of claim 1. Anticipation under 35 U.S.C. § 102(e) requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F. 2d 760, 218 USPQ 781 (Fed. Cir. 1983).

Trimberger does not disclose, at a minimum, a control processing facility comprising a control execution path. Trimberger only discloses a general-purpose processor having a fixed

execution unit and a configurable execution unit. Thus, Trimberger does not benefit from the synergies of having dedicated control and data sides, with the data side comprising a fixed and a configurable data path. The fixed and the configurable data paths may be considered as sub-paths of the data path. In addition, Trimberger uses the fixed execution unit for both control and data processing, and thus does not benefit from parallelism. Thus, claim 1 is not anticipated.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claims 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon (claims 2-21) are also patentable. In addition, it is respectfully submitted that the dependent claims 2-21 are patentable based on their own merits by adding novel and non-obvious features to the combination.

B. Independent claims 22 and 23

Independent claims 22 and 23 have been amended to recite “said computer processor comprising a control execution path.” This amendment is supported at least by page 5, second paragraph of the Applicant’s description.

The Office Action asserts that Trimberger discloses all of the limitations of claims 22 and 23. However, at a minimum, Trimberger does not disclose a control processing facility comprising a control execution path. Trimberger only discloses a general-purpose processor having a fixed execution unit and a configurable execution unit. Thus, Trimberger does not benefit from the synergies of having dedicated control and data sides, with the data side comprising a fixed and a configurable data path. The fixed and the configurable data paths may

be considered as sub-paths of the data path. In addition, Trimberger uses the fixed execution unit for both control and data processing, and thus does not benefit from parallelism. Thus, claims 22 and 23 are not anticipated.

C. Independent claim 24

Independent claim 24 has been amended to recite “a first plurality of instructions having a field indicating a control processing operation.” This amendment is supported at least by page 8 second paragraph of the Applicant’s description.

The Office Action asserts that Trimberger discloses all of the limitations of claim 24. However, at a minimum, Trimberger does not disclose a field indicating a control processing operation. Trimberger only discloses a general-purpose processor having a fixed execution unit and a configurable execution unit. Thus, Trimberger does not benefit from the synergies of having dedicated control and data sides, with the data side comprising a fixed and a configurable data path. The fixed and the configurable data paths may be considered as sub-paths of the data path. In addition, Trimberger uses the fixed execution unit for both control and data processing, and thus does not benefit from parallelism. Thus, claim 24 is not anticipated.

D. Independent claim 25, and dependent claims 26-27

Independent claim 25 has been amended to recite “and a look-up table to convert relatively bits in an instruction into a set of relatively complex configurations for said configurable operators.” This amendment is supported by page 11, second paragraph of the description.

The Office Action asserts that Trimberger discloses all of the limitations of claim 25. However, at a minimum, Trimberger does not disclose a look-up table to convert relatively bits in an instruction into a set of relatively complex configurations for said configurable

operators. Trimberger only discloses a general-purpose processor having a fixed execution unit and a configurable execution unit. Thus, Trimberger does not benefit from the synergies of having dedicated control and data sides, with the data side comprising a fixed and a configurable data path. The fixed and the configurable data paths may be considered as sub-paths of the data path. In addition, Trimberger uses the fixed execution unit for both control and data processing, and thus does not benefit from parallelism. Thus, claim 25 is not anticipated.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claim 25 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon (claims 26-28) are also patentable. In addition, it is respectfully submitted that the dependent claims 26-28 are patentable based on their own merits by adding novel and non-obvious features to the combination.


CONCLUSION

For at least the above reasons, all pending claims 1-28 are in condition for allowance. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call the Applicant's' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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